

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/041280 A1

(51) International Patent Classification⁷: **H01L 21/28**,
21/288, 21/768, 29/786, G09F 9/00, 9/30, H05B 33/04,
33/10, 33/14

(72) Inventor; and

(75) Inventor/Applicant (for US only): **YAMAZAKI, Shun-
pel [JP/JP]**; c/o Semiconductor Energy Laboratory Co.,
Ltd., 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

(21) International Application Number:

PCT/JP2004/016175

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date: 25 October 2004 (25.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

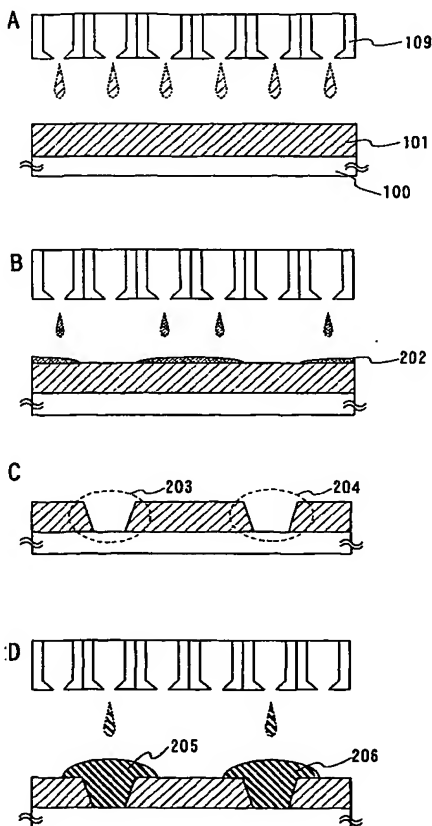
2003-367051 28 October 2003 (28.10.2003) JP

(71) Applicant (for all designated States except US): **SEMI-
CONDUCTOR ENERGY LABORATORY CO., LTD.**
[JP/JP]; 398, Hase, Atsugi-shi, Kanagawa 2430036 (JP).

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: METHOD FOR MANUFACTURING SEMICONDUCTOR DEVICE



(57) Abstract: It is an object of the present invention to provide a method for manufacturing a semiconductor device in which prevention of disconnection due to a step caused by a surface shape before film formation, control of increase in the cost in forming an insulating film over a large-sized substrate, improvement of the usability efficiency of a material, and a reduction in the amount of waste are realized. In the invention, a first insulating film is formed by discharging a composition, a second insulating film is selectively formed over the first insulating film, and an opening is formed by etching the first insulating film by using the second insulating film as a mask. Afterwards, a conductive film is formed by discharging a composition over the opening, and a wiring in a lower layer and a wiring in an upper layer are connected each other with an insulating film therebetween.



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*